DOCUMENT RESUME

ED 108 070 CG 009 889

AUTHOR Stahmann, Robert F.
TITLE Computerized Interest Testing and the Major Field of Study Map (MFM)
PUB DATE 7 Mar 75
NOTE 6p.; Paper presented at the Annual Convention of the American College Personnel Association (50th, Atlanta, Georgia, March 5-8, 1975)

EDRS PRICE MF-$0.76 HC-$1.58 PLUS POSTAGE
DESCRIPTORS *College Majors; *Computer Oriented Programs; *Counseling Programs; Higher Education; *Interest Tests; Speeches; *Vocational Counseling
IDENTIFIERS *Major Field Of Study Map; MFM

ABSTRACT

This paper discussed two innovations in the application of computer technology to vocational counseling in a university: (1) administration and scoring of a vocational interest inventory through the means of a cathode-ray-tube typewriter computer terminal, and (2) the development of the major field of study map (MFM), using local university norms. (Author)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED108070

COMPUTERIZED INTEREST TESTING AND THE MAJOR FIELD OF STUDY MAP (MFM)

ROBERT F. STAHMANN*

UNIVERSITY COUNSELING SERVICE, UNIVERSITY OF IOWA

This paper discussed two innovations in the application of computer technology to vocational counseling in a university: (1) administration and scoring of a vocational interest inventory through the means of a cathode-ray-tube typewriter computer terminal, and (2) the development of the major field of study map (MFM), using local university norms.

Today I would like to briefly describe the computerized vocational interest testing at the Counseling Service of the University of Iowa. The computerized administration of vocational interest inventories has not been discussed in the professional literature. In a recent review of the literature I was unable to find any studies relating specifically to that topic.

The computer terminal, a cathode-ray-tube type, was originally used at Iowa with the Computerized Vocational Information System (CVIS), an occupational information system discussed by Harris (1974). CVIS is a program which provides a student with information regarding college selection, occupational exploration, etc. and has been used in junior college and college vocational counseling. Originally at Iowa, the standard CVIS program was modified for use with University students. As an addition to the CVIS capability, the University Counseling Service in cooperation with the American College Testing Program placed the ACT Interest Inventory (ACTII) on the computer. After that, it was possible for a student to sit at a typewriter computer terminal in the Counseling Service reception room and interactively take the ACT Interest Inventory and to explore college choice and/or fairly detailed occupation information.

The ACT Interest Inventory is a ninety item inventory scored on six scales of fifteen items each. The six scales correspond directly to the six personal-vocational orientations proposed by Holland (1973) in his theory of careers.

CG009899

*A paper presented at the annual meeting of the American College Personnel Association, Atlanta, Georgia, March 7, 1975.

The scales are Technical, Science, Creative Arts, Social Service, Business Contact, Business Detail. The ACT Interest Inventory (ACTII) is part of the ACT National Assessment Program (ACT, 1974).

MFM Project Development

The initial use of the computer was to enable a student to sit down at the computer terminal and interactively complete the ACTII. The procedure was simply one of having the student respond to the test items by pressing the keyboard as they appeared on the cathode-ray-tube screen. After the student had completed the ACTII, which typically took about fifteen minutes, the next step was for the computer to print out his/her six scores and a brief interpretation of the scores. Thus, it was possible for a student to assess, in hierarchial order, the strength of interest in six areas (ACT Interest Inventory Manual, 1974).

In the Spring of 1973, ACT was developing norms on college seniors tested with the ACTII. At the same time at the University of Iowa, we administered the ACTII to approximately seventy percent of the graduating seniors in the undergraduate colleges as well as graduates from three professional schools--dentistry, law, and medicine. Thus, data from two samples, a "local" University of Iowa sample and a "national" sample of thirty-two colleges were being collected. At Iowa, this norm testing continued last spring so that we now have local Iowa norms based on graduates of 1973 and 1974.

The data from the graduates in the various fields of study were analyzed using multiple discriminant analysis. Multiple discriminant analysis is a statistical technique which maximizes the differences between groups and minimizes the differences within groups (Stahmann, 1969). The results of the multiple discriminant analysis yielded information which could be plotted in two dimensional space showing the relationship of the various major fields of study to each other. Thus, a point based on two coordinate scores was identified for each major field of study. This center of the cluster of scores for each major field of study was plotted and identified as the location or centroid of each major field of study. The

compilation of plots became a Major Field of Study Map (MFM). See the attached figure.

The computer was programmed so that the future students taking the ACTII would immediately have the two coordinate scores reported for them. These two coordinate scores would then permit the student to plot a point on the major field of study map. The proximity of that point to various major fields of study would allow the individual to explore his/her interest compared to satisfied and successful graduates in various fields of study at Iowa. The computer was also programmed to compute the two coordinate scores to use on the "national" normed ACT Interest Map. Thus, a University of Iowa student within a half-hour period of time could sit down at the cathode-ray-tube computer terminal and 1) take the ACT Interest Inventory; 2) obtain six scores on the six interest areas scored by the ACTII; 3) obtain two coordinate scores for the University of Iowa Major Field of Study Map (MFM) and plot them; 4) obtain two coordinate scores for the ACT National Major Field of Study Map (MFM) and plot them.

Future Development

Harris (1974) indicated that the computer was the guidance tool of the future. Our experience would tend to support that position. Our experience has been that students typically enjoy the interactive method of taking the ACTII. The use of the computer and MFM as an adjunct and aid in vocational exploration appears to be in its infancy. A next step at the University of Iowa project is to encode much of the descriptive information regarding various fields of study available at the University. Specific information from the University faculty, administration, and students could be included as well as information from students majoring in the areas. The computer because of its interactive capabilities with the student really expands the "juke-box" system described by Magoon (1964).

Given the wide availability of computers in the University setting today, a local major field of study map (MFM) could be developed almost anywhere. The primary ingredients would be an interest inventory, major field of study criterian groups, and computer facilities. While we at Iowa used the ACTII, other inventories such as the Holland Vocational Preference Inventory or the Occupational Interest Inventory would be appropriate. The technical and methodical aspects of developing such a program are described elsewhere (Stahmann, Grandy, and Hanson, in preparation).

Similarly the technique of the MFM might be expanded into occupational groupings, yielding an "Occupations Map." The primary difference here would be that the criterian groups would be occupational membership rather than major field of study. The technology is now available for developing such usage.

References

ACT, How to use the ACT interest inventory. Iowa City, Iowa: ACT, 1974.

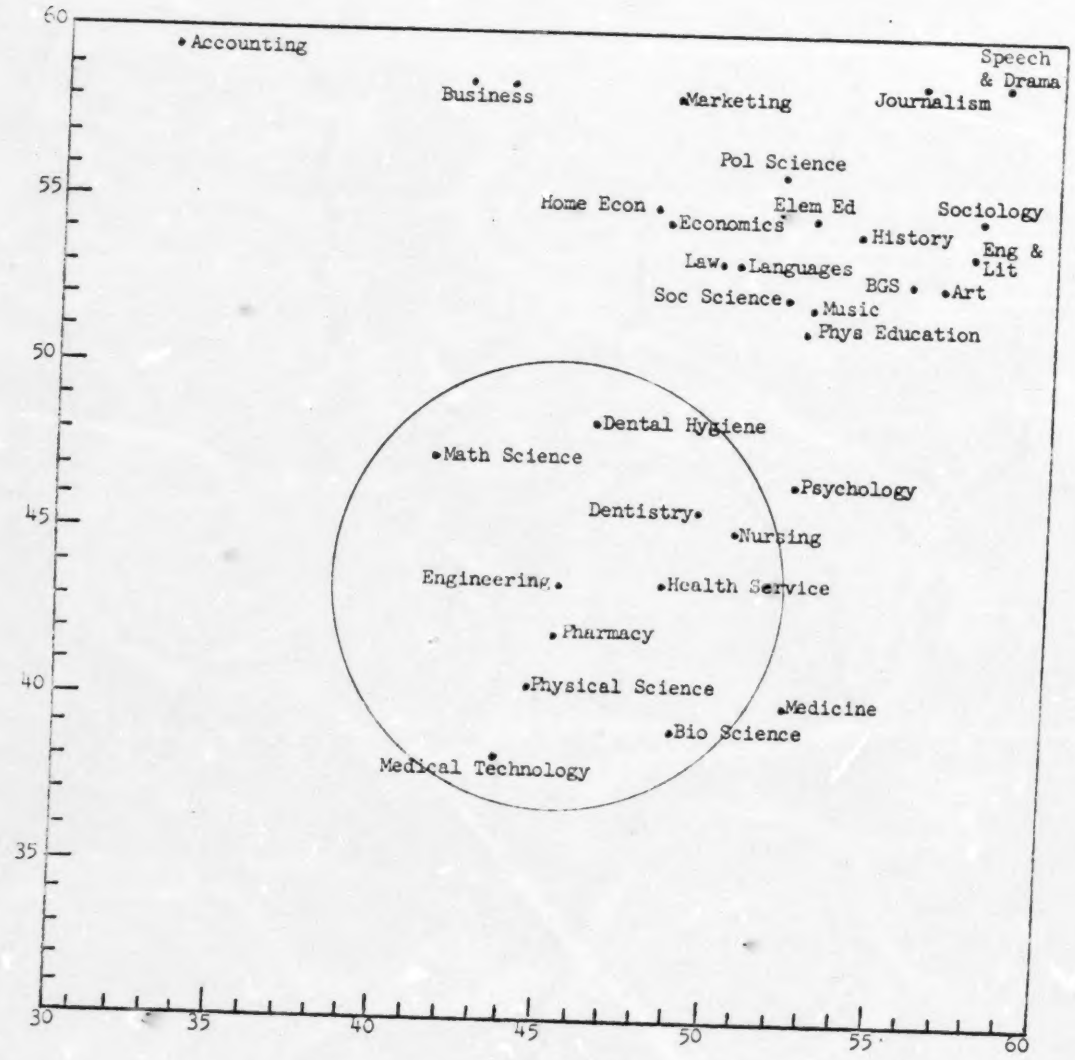
Harris, J. The computer: Guidance tool of the future. Journal of Counseling Psychology, 1974, 21, 331-339.

Holland, J. L. Making a Vocational Choice: A Theory of Career. Englewood Cliffs, New Jersey. Prentice-Hall, Inc., 1973.

McGoon, T. Innovations in counseling. Journal of Counseling Psychology, 1964, 11, 342-347.

Stahmann, R. F. Predicting graduation major field from freshman entrance data. Journal of Counseling Psychology, 1969, 16, 109-113.

Stahmann, R. F., Grandy, T. G., & Hanson, G. R. The development of the Major Field of Study Map for colleges and universities, in preparation.



University of Iowa Major Field of Study Map (MFM)